

AMERICAN VETERINARY REVIEW,

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ORIGINAL ARTICLES.

THE HORSE'S FOOT.

BY A. ZUNDEL.

(Continued from page 328.)

SANDCRACKS.

Seime of the French; *Hornspalt* of the Germans; *Fissura* of the Italians—are fissures or solutions of continuity observed on the walls of the foot, ordinarily very narrow, which follow the direction of the horn. Principally observed on the hoof of solipeds, it has been seen also in ruminants, but rarely, and of little importance.

I. *Division*.—They may exist on every part of the wall. On the median line of the nail they are called *toe-crack*, and then are more frequent on the hind feet. They are rarely found on the outside or inside toe (the *mamelles* of the French), but commonly met with on the quarter (*quarter-cracks*), then situated on the lateral parts of the wall, towards the heels, and more frequently on the fore feet, especially on the inside. They are sometimes oblique, relatively to the thickness of the wall. Cracks

are superficial or deep, according to the thickness of the wall involved. They are *complete* when they extend from the coronary band down to the plantar border; *incomplete* when more limited. In this last case, those which do not extend up to the skin are the more disposed to recovery, and will grow down with the growth of the wall, while those which extend to the coronary band are more serious, being continually aggravated as the growth of the hoof progresses. According to the date of their formation, they are called *recent* and *old*. *Simple* cracks are those which only involve the wall; they are *complicated* where there is a more or less serious lesion of the tissues beneath, such as inflammation of the laminæ, hemorrhage, or caries of the bone. A serious complication is that of keraphylocele.

II. *Symptoms*.—Often the solution of continuity is the only one observed, and it is the special characteristic of the disease. But the fissure may be masked, either accidentally or by design. It may be concealed by the hairs; by the mud; or covered by hoof-ointment, tar, wax, or even a putty of gutta-percha. Concealed internal cracks have sometimes been discovered, such as fissures involving the internal face of the wall, which, consequently, were not noticed from the outside, or showing but a slight depression on the surface of the wall. These cracks are only discoverable when the foot has been well pared down. As slight as the solution of continuity may be, it participates in the motion of dilatation of the foot, and is better detected when the foot is raised than when it rests on the ground. This is the case when it is a toe-crack, but on the contrary, the quarter-crack is more open when the animal rests its weight on the leg; in which case, the separation of the borders of the cracks may be from two to four millimetres, and may expose the bottom of the fissure. Ordinarily, cracks appear first at the coronet, and there is then but a slight opening, but as they become older, and grow down, they have a tendency to become deeper and more complete. When of old standing, their borders are rough and scaly, having between them an ulcerated tissue and sometimes a fungus growth, from which escapes a sanious fluid. In other cases, as of quarter-crack, the edges have a tendency to cover each other.

Superficial cracks are not always attended with lameness; it is, on the contrary, often very severe when they are deep. The pain is generally in proportion to the depth and the degree of opening of the fissure, and also especially to any complications which may exist in the tissues beneath. The lameness seems at times to be due to the injury of the deep, soft tissues, and to be caused by the motions of the horny box when they become pinched, irritated and bruised. The affected animals are especially lame when the foot rests on the ground, and the lameness is greater on a hard than on a soft surface. If an animal suffering with toe-cracks is moved on descending ground, the lameness is greater than on ascending a hill, the weight of the toe in the latter case producing less opening of the edges of the solution of continuity. In quarter-cracks, the severity of the lameness is always in proportion to the rapidity of the gait; many horses which are but slightly lame on a jog, become much more so when the gait is accelerated, the dilatation of the heels being greater, and the separation of the borders of the crack increasing in proportion to the speed. When there is lameness, there is naturally an increase of heat and sensibility of the foot, especially at the seat of the crack. This is often discovered by feeling with the hand; old cracks are generally accompanied by a thickening existing at a corresponding point of the hoof. A deep, but recent crack, is apt to be accompanied with hemorrhage; there is blood which sometimes exudes between the borders of the crack, and flows in abundance when the movement is rapid; an old crack, in similar circumstances, may show pus, sometimes mixed with blood. A misstep, a sprain, may give rise to hemorrhage in cracks which are ordinarily dry. In toe-crack, the solution generally involves the thickness of the wall, through which it runs in a line almost parallel to the median plane of the body, while in quarter-crack it is often oblique and irregular, not exactly following the direction of the fibres, but following the thickness of the wall obliquely, in such a way that the external solution of continuity is more posterior than the internal. If the crack is rather old, and the foot where it exists is contracted, it is generally incurvated, one border covering the other, and sometimes they seem to be

moulded on each other so as to cover and conceal the true crack.

III. *Complications.*—Amongst these we may first mention the inflammation of the recticular tissue, which is first pinched and injured. This may be followed by suppuration and local gangrene. Very often the disease is followed by necrosis of the os pedis, and caries of varying depth. In toe-crack, cases have been seen of caries of the tendon of the anterior extensor of the phalanges, and even arthritis, though rarely occurring, has been observed. In quarter-crack, one may have cartilaginous quitter and suppurative corns. As before stated, these lesions are indicated by the severity of the lameness, the presence of the blood or pus through the crack, and the extreme sensibility of the part. It is especially when, in the course of treatment, a part of the hoof has been removed, that the keratogenous apparatus has been exposed, that the abnormal coloration of the podophyllous tissue is seen, in its swollen condition and its sensibility to pressure, accompanied with the presence of the pus or sanious discharge, and at times the necrosis of the bone. Sometimes, also, foreign substances, as dirt or gravel, may be found introduced in the cracks, and acting as causes of irritation to the sensitive tissues below.

A complication, not so frequent, however, according to some authors, is that known as *Keraphyllocele*, and which consists in an hypersecretion of horn, from the coronary band on the inside of the crack. Sometimes the horny growth remains separate from the borders of the crack, and is adherent to the wall only by its base, towards the coronary band; this is especially the case when the wall has been thinned down or partly removed. In other cases it is adherent to the two borders of the crack, and this forms a natural cicatrix. This horny column of varying length and strength, according to its age, presses upon the tissues beneath, and gives rise to severe lameness. With time there is corresponding atrophy of the podophyllous tissue, or even of the os pedis. This is often followed by a marked deformity of the hoof, and especially a deep fissure, parallel to the direction of the crack. The soft tissues under the keraphyllocele often, in time, become harder, in consequence of the disappearance of the papillæ; the hoof then is no longer adherent to the tissues

beneath, and so incurable cracks are the result. A double wall or false quitter have often also been observed. Thus deformed, the foot is always subject to lameness, even if the crack is cured. Contraction or atrophy of the frog have been observed with quarter-crack.

IV. *Progress, Duration, Termination.*—Ordinarily cracks once existing become worse. From being superficial and imperfect they become deep and complete as a natural result of the ordinary motions of the foot. If rest and some hygienic attention can be given, they may recover spontaneously, and disappear by the natural downward growth of the hoof. This fortunate termination, however, is principally obtained when the crack is due to accidental causes, without deformity of the foot.

V. *Prognosis.*—Simple cracks, superficial and incomplete, especially arising from the plantar border, almost always recover under rational treatment, which has for its principal aim the prevention of increase in the size of the fissure. Cracks starting from the coronary band are always of a more serious nature, with a tendency to increase easily. Still they are no longer to be considered incurable. Cracks in which the borders are much separated by the motion of walking; those which are oblique; those whose edges are incurvated inwards; those where a portion of the wall is loose; those which bleed, and those where there is a continued irritation of the sub-horny tissues, are the most serious, so much so that they may require quite serious surgical interference, and after all baffle the best skill of the operator.

VI. *Etiology.*—The causes of cracks vary greatly, and are often multiple in a single case. Seldom the result of accident, they are most commonly the combined effect of both a predisposing and an extraneous cause. A frequent one among others is the relative dryness of the hoof, which then become excessively brittle. We have seen the conditions in which the hoof loses its natural flexibility, and shall here only state that alternate changes from dampness to dryness have as much influence as the dryness alone. Cracks are more frequent in animals working along damp than in those pulling in dry and stony roads. They are common in animals which, after being kept in pastures, are

placed in good paved stables, with dry bedding. It is principally in these conditions we find the quarter-crack. During some seasons, while a term of dryness follows continued wet weather, the conditions are favorable to their formation, and they often assume an epizootic form. Emigration to dry climates is a frequent cause, by producing the contraction of the ungual structure. This last circumstance explains why cracks are more common in army horses, which are called to go on long journeys during the warm days of summer. But if the European horse taken to Africa suffers less from the disease, a similar result occurs in the African horse when brought to our climate. The Arabian horse readily contracts quarter-cracks in our stables, and with our shoeing. Animals with small feet, or with hard and thick hoofs, have a natural predisposition, which is also found in Hungarian, Russian or Tartar animals. Feet excessively large are also easily affected with the disease, especially those which have canker or grease.

Unskilful shoeing may predispose to cracks, and this is principally the case if the wall is thinned or rasped down too much; the same result is obtained from shoes which are too wide or too heavy, or which are kept on by too heavy nails.

Feet with the toes turned outwards are predisposed to it, as in these the weight of the body rests more on the internal quarter, which being thinner than the external, give way the easiest. Contracted feet are subject to it. Quittor, suppurative corns, and some other diseases are also predisposing causes. Among occasional or accidental causes may be mentioned traumatism, contusions of the foot, and blows during work. The service of heavy trucking for heavy horses exposes the hind feet to toe-crack, especially if the pulling is done in going up hill or on slippery pavements; mules' feet are very subject to it, and heavy falls in jumping and external blows are occasional causes.

Heridity in cracks has been mentioned. We do not admit this except so far as it belongs among the predisposing causes which may be transmitted, and we should object to an animal for breeding purposes, if, though otherwise well formed, he were affected with cracked feet.

(*To be Continued.*)

RESUMED STUDY IN ANTHRAX.

CONSIDERED FROM THE POINT OF VIEW OF SANITARY POLICE.

BY PROF. DESSAET.

(Continued from page 279.)

IV.—ETIOLOGY.

Anthrax is a disease generally enzootic, produced by a local factor, to-day perfectly known. This (bacteridie of Davaine) lives in a cryptogamic state upon certain plants of fodder which grow in the localities where the disease exists, or is found on the ground in the state of germ. In this last case, the germs, as well as the mucedinæ accidentally on the ground, are, on account of their very small size, transported to a certain distance by currents of air upon plants. Rain-water, especially in poor, permeable under-soil, may also carry off these mycrophites with the mud that they cart along, and then go and contaminate neighboring pastures. These germs arise from two prolific forces, the normal sporulation of the mucedinæ, and the endogènesis which is accomplished amongst the bacteridian segments in the animal economy after the multiplication of the batonnets by fissiparity.

The cadavers of carbuncular animals, in breaking up, set free the numerous microbes to which they have given temporary shelter.

These microscopic organisms are then only in the state of germ-corpuscles. That is, that the medium in a state of putrefaction, in which they are situated, does not allow them to grow, on account of the penury of oxygen, while the microbes in the state of batonnets are destroyed by the influence of this same medium, or rather, asphyxiated by the excess of carbonic acid which it contains. But these germ-corpuscles possess a great vital resistance. They are afterwards left on the place where the cadaver has undergone disaggregation, or are buried with it, or carried off by rain-waters over surrounding grounds, or at last removed by the winds to other parts more or less distant. Where they are inhumed with the cadaver, a great quantity of them, after a

certain time, return to the surface. This return is rendered possible by several circumstances, such as the visits of animals, which dig the ground which is used for burying; the running of water; the ascending force of underground gases; and, lastly, the intervention of earth-worms, which, by feeding upon carbonaceous cadavers, swallow at the same time a great number of germs which resist digestion. They are found intact in the earthy residues which fill the intestines of these worms, and they are thrown off with the dejections. This fact was proved by M. Pasteur. It shows evidently that the earth-worms are the true *carriers* of anthrax.

However, pastures and fodders, as well as waters which wash them off, being thus contaminated by the mycrophites and their germs, these small organisms are taken in with the food and drink, or inhaled with the air where they are suspended. These microbes are in this way *inoculated*, that is, introduced into the circulation through solutions of continuity of the internal tegument. We have already shown by what circumstances these solutions of continuity principally take place.

Such is the etiology of anthrax in the majority of cases. It clearly indicates what medical policy must be established against that disease. But it is also necessary, with this in view, to consider that anthrax may also be transmitted through other means besides those actually exposed. The manure of diseased animals may also infect pastures upon which it is thrown. The presence of the bacteridian micrococci unaltered by digestive fluids, has recently been demonstrated in the droppings of infected animals.

Healthy animals, with sores on the skin, may evidently contract the disease through their *contact* with diseased subjects or with any objects or substances soiled with bloody saliva, dejections, or other matters coming from diseased individuals or their cadavers.

But can contagion from a *distance* take place? Most authors, even amongst those whose writings are more recent, admit the possibility of this mode of contagion. It is denied only by a few. At any rate, microbiotic nature of anthrax is not a sufficient reason to discard that possibility. It, then, would be imprudent

to ignore entirely the virulent action at a distance, though it is rare and its radius of power very limited. In the point of view of medical police, it imports little that the fault be of a physical, chemical or biological order. Its possibility alone is sufficient to insure its consideration.

V.—MEDICAL POLICE.

The true prophylaxy of anthrax consists in the improvement of the soil of the countries where the disease exists; of the *carbuncular districts* of Roll.; also in the ameliorations of the cultures which are placed in them. By draining and the free use of lime, these soils are rendered first, unfavorable media to their conservation, and improved moreover for the growth of plants upon which the mucedinæ live.

In the carbuncular districts, inoculation by the mode of Professor Toussaint, ought to be strongly recommended,* if, however, it realizes in practice the results obtained in the laboratory.

The proper method of preventing the spreading of the disease and the multiplication of the germs are: quarantine; slaughter of the sick animals; destruction of the cadavers and beddings and disinfection of places frequented or occupied by contaminated animals. Let us glance at each of these.

Quarantine.—The sequestration must be enforced. The sick must literally be kept in confinement and isolation.

If it is a flock of sheep, out of which several are already affected, the others must be severely separated. An excellent practice in this case, when possible, is to remove the healthy to another pasture, or better, to have them *emigrate*. These measures are often sufficient to check the appearance of new cases.

Slaughter.—The royal decree of 1854 gave an indemnity for animals killed because of anything, when the slaughter was found necessary. Another decree of 1868 removed this indemnity. Was it proper? The question can be discussed. It is evident

* This learned professor has inoculated sheep with fibrinated carbunculous blood, exposed to a temperature of 55° C. By this means he has given immunity to animals against that disease.

that it is better in all points of view to see the living* or dead carbunculous animals disappear *as quickly as possible*.

It is evident that the object in view would be best secured by encouraging by indemnity, or other means, the owners of diseased animals to have them destroyed *at once*. It would be wise, in our view, in the same sense, to go farther, as is done in case of typhus; and this in consequence of various considerations, many of which escape the comprehension of sanitary police so-called.

However, we may ask if there is reason in demanding the obligatory (forced) slaughter in case of contaminated animals? Evidently, no. Forced slaughter, applied as a means to prevent the transmission of anthrax from diseased to healthy animals, cannot be justified. That isolation, with other complementary measures, may be sufficient for this, is rendered more probable by the fact that the disease kills usually in so short a time.

Forced slaughter is a measure exceptionally serious, which touches the owners of animals in their interests, as well as their rights. Such a measure, always odious when it is unnecessary, can be justified only when the disease, against which it is directed, places in imminent danger the agricultural wealth of a country, or invades the public safety.† Anthrax is not included in these conditions.

Destruction of the Cadavers and Bedding.—From the etiology of anthrax, well established to-day, it is proved that there is almost only one mode of efficacious destruction of carbuncular cadavers; this is by fire. The use of concentrated mineral acids leave usually, parts which are untouched. Too large quantities would be required for complete success. They might be employed, however, if the cadavers were in close proximity to

* We are justified in concluding from Toussaint's experiments that the sporulation or endogenesis exterior to the segmentation of the batonnets, that is to say, the production of the germ-corpuscles, takes place in the living animal economy within eighteen hours, at least, after the entrance of the leptothrix into the circulation. It is then of great utility to slaughter the patients as quickly as possible, in order to prevent the formation of those germ-corpuscles, whose life possesses such a powerful resistance. We have seen how in the state of mycelium the microbe dies easily under the influence of ordinary causes.

† Such as typhus or hydrophobia.

a factory of chemical products. They might then be at once transported in the recipients of those establishments.

Several kinds of furnace have been invented for that purpose—but we must acknowledge that satisfactory apparatuses to meet the demand are yet to be found, and in consequence one must be satisfied with the *burying*, the method now in use, and which we would recommend with the following conditions:

1st. The depth of the fossæ ought to be three meters, and in all cases one metre beyond the layer of humus, so that the cadaver should rest on a soil little or not at all frequented by earth-worms.

2d. The cadavers should be covered with lime, salt, or other substance capable of destroying or dispersing the worms; then spread over the first layer of ground a thick coat of lime, mixed with ashes, gravel and cinders, so as to form a kind of bed which would isolate the cadaver and prevent the return to the surface of the ground of the carbunculous germs or of the lumbricoids carrying them.

3d. Pack earth over this bed in sufficient quantity to leave the whole, when filled, higher than the level of the ground—as an indication of the burying having taken place there.

4th. Forbid, under severe punishment, the opening of such places afterwards for at least six years.

5th. If, as is desirable, the towns of carbunculous districts were to establish a special spot for such burying, this ground is not to be cultivated. The grass growing over it could not be utilized; it should be burned every year on the land. This spot ought to be protected by fences, and cattle not allowed to come in it. A sign board should indicate its use.

Cadavers ought to be transported to the burying-ground in vehicles with tight bottoms. Dragging them over the bare ground exposes the whole trail over which they pass to contamination.

The bedding, as well as the stercorations, droppings or other dejections, ought to be burned, as well as the floor or ground of the stable. Burning of dry branches of trees answers the purpose.

Desinfection.—This must be applied to the localities occupied or frequented by diseased animals, as well as for any other objects likely to be contaminated. If the locality allows, without

danger, the burning of very dry straw or hay is very advantageous, the place having been at first well cleaned and broomed, the dirt removed outside to be destroyed as before described.

These operations carried on, fumigations of chlorine or sulphurous acid are indicated, followed, the next day, by carbolized white-washing. The mangers, hay-racks, tools for cleaning, etc., are thoroughly washed and boiled in phenic water.

We do not believe it to be useful to disinfect the urine, unless in tanks. In the majority of establishments the urine is received in large common pipes, or remains mixed with the manure until this is ready for use in the field. In this case the best plan is not to use this infected urine, except on soils which for a number of years will not be used as pastures.

The burning of grasses at certain times of the year is recommended by Mr. Galtier.

All these means of disinfection have one common object, the destruction of the carbuncular microb, principally under the form of germ or that of mucedinæ.

The order directing the *entire* destruction of the cadavers tells sufficiently of our vigorous opposition to the use of the meat or other products under any pretext.

The veterinarian must never forget that anthrax is a fatal zoonosis. He must then advise of the dangers of inoculation all persons who have the care of the sick ones. For this reason also he will prevent any person with wounds or sores on the hands or face attending to these duties.

TRICHINÆ,

A LECTURE DELIVERED BEFORE THE STUDENTS OF THE
AMERICAN VETERINARY COLLEGE.

By F. S. BILLINGS, V. M.

The very intimate connection which exists between many specific diseases, and diseased conditions of our domestic animals, especially those which are used, either in themselves or through their products, for human food, is a subject which has been left, until the past few years, too much out of consideration, not only

by the public itself, but by those who are especially employed in the study of the question of public hygiene.

While the Bible tells us that the first commandment is "to have no other God beside me," it is unquestionably true that this has to do with the spiritual man, and that the first command to the material man should be, "man, know thyself;" a command which has been for him very much neglected, for the average individual knows very little of the physiological laws which control the action of the machine which he calls his body, or of the causes within or external to himself, which lead to the disturbances of the regular or physiological running action of this complicated engine.

It will be our endeavor in the succeeding pages to briefly call public attention to some of the most important causes of disturbance which come to pass in our own organisms, that are to be sought in our domestic animals, but not to write any learned treatise on the same.

As the majority of the American people are inclined to assume that the limit of all our knowledge may be always sought in the Bible, it may not be inappropriate to turn to the pages of that book in order to see what Moses had to say to the chosen of Jehovah, with reference to the question in point. We find, however, that the laws and regulations which were given to the Jews had far less reference to the health of that people, than to the certain assumed uncleanness or unsuitableness of certain classes of animals for food. Some enthusiasts have even gone so far as to assume that Moses' aversion to the flesh of swine was to be attributed to his knowledge of the presence of trichinæ in the swine, but as these pests are microscopically small any such assumption is simply to be classed with many another absurdity of ignorance and credulity.

That diseased animals were unfit for food did not, however, entirely escape the attention of the learned author of Israelitish law, but his restrictions as to its use did not extend beyond the chosen people, for he seems to have been as utterly regardless of the effects of such flesh upon others as any modern butcher well could be.

With a *sharpness* for business which could not be excelled by the most expert of Yankee tradesmen, he says: "Ye shall not eat of any thing that dieth of itself; thou shalt give it unto the stranger that is within thy gates that he may eat of it; or thou mayest sell it unto an alien, for thou art an holy people unto the Lord thy God."—Deut. xiv, 21.

Numerous passages which command that all blood must be removed from flesh before using it for food, lead one to infer that all such articles were to be well cooked before being eaten, and that "under-done" or "raw-warm" meats were an abomination to the Jews, as they should be to all people.

Plutarch asks, "Why is it that the priests of Jupiter are forbidden to touch raw flesh?" and answers: "Raw flesh is no more a living creation, but is unfit to eat. Cooking gives it another form."

As we follow the development of civilization we find more and more notice taken of the question in point. It has been reserved, however, for our own day to begin active and systematic research into these relations, and to make earnest endeavor toward the discovery of their causes, the means and ways by which the latter gain access to the human organism, and to seek out conformable means of preventing the same.

We are living in the day which marks the birth of systematic attempts at the development of preventive medicine. The old saying, "An ounce of prevention is worth a pound of cure," is beginning to be practically appreciated by the best minds in the medical profession, and the people as well, and specialists are doing their utmost to forward its universal acceptance.

Not only is human life endangered by the consumption of the products from previously diseased animals, or from the consumption of improperly cured or cooked flesh, but quite a number of animal diseases are capable, by intentional or other means of transmission, of infecting the human organism.

Professor Virchow has said that man is much more susceptible to infection from contagious or infectious diseases of animals than animals are to infection from similar diseases peculiar to man.

TRICHINIASIS OF MAN AND ANIMALS.

There is, perhaps, no one disease of our domestic animals which enjoys a more sensational reputation, or which has been more thoroughly investigated, than the disease of swine caused by the parasite *trichinæ spiralis*. There is none more worthy the attention of the public or the hygienic investigator, than this disease of the swine, and other animals, as well as man. Although the literature treating upon the disease is of comparatively modern origin, still we have no justifiable reason for doubting the presence of these parasites in swine at an early date, and also, that the consequential disease in man must have existed for years, if not centuries, before it came to scientific recognition, probably almost coeval with the consumption of pork as human food.

Heller says, "The history of this disease can be appropriately divided into three periods: the first beginning with the discovery or observation of the capsule, the parasite not being recognized in 1821-28, and including the first description of the capsule by Dr. Hilton, of Guy's Hospital, London, England, in 1835. The second period extends from 1835, when Paget discovered the encapsuled parasite, and Owen described it, giving it its name, *Trichinæ spiralis*, to the first authentic observation of the disease in a human being and the direct establishment of the connection with a parasitic disease of swine, which took place in 1860, which begun the third period in the history of the disease," in which we ourselves are at present, for, notwithstanding all the valuable work done in this field of pathological research, the real key to the prevention of the disease, the white stone, which all pathologists desire to acquire, is not yet found, that is, *it is not known how the swine become primarily infected*.

Leidy was the first to discover the encapsuled parasite in the flesh of the pig, in 1847, but as said above, it was not till 1860 that the connection between the parasites infecting the flesh of hogs and man was unquestionably established.

The principal workers in this important field have been Owen, Cobbold, Bristow and others in England, and Luckart, Virchow,

Gerlach, Furstenberg, Zenker and Kuchenmeister in Germany.

Trichina spiralis, is an "extremely minute nematode helminth, the male in its fully developed and sexually mature condition measuring only 1-18 of an inch, whilst the perfectly developed female reaches a length of about 1-8; body rounded and filliform, usually slightly bent on itself, rather thicker behind than in front, especially in the males; head narrow, finely pointed, unarmed, with a simple central minute oval aperture; posterior extremity of the male furnished with a bilobed caudal appendage, the cloacal or anal aperture being situated between these divergent appendages; penis consisting of a single spicule, cleft above so as to assume a V shaped outline; female stouter than the male, bluntly rounded posteriorly, with genital outlet placed forwards—at about the end of the first-fifth of the long diameter of the body. Eggs measuring $\frac{1}{16}$ of an inch from pole to pole; mode of reproduction viviparous."—*Cobbold Entozoa*, p. 335.

*The shell-less ova develop into minute embryos immediately on fructification, and completely fill the uterus of the female and are born in immense numbers. Scarcely have they become free from maternal protection before they begin their migration over the autositic organism by penetrating the parietes of the intestines in order to settle themselves in the flesh of the same, as muscle-trichinæ." Here, under the protection of a gradually calcifying structureless capsule, the migrated embryos, or muscle-trichinæ, retain their vitality for years, while the sexually matured or intestinal trichinæ perish, as a rule, in the course of about five weeks. The embryos, which sometimes pass away from the auto-site, or host, with the fæces, may, under favorable conditions, give occasion to the development of muscle-trichinæ in a second autosite by gaining access to its intestinal tract."

As we have said, these parasitic pests assume two forms, *i. e.*, they may be met with as intestinal and muscular trichinæ, the first representing the sexually matured, the latter the embryonal quiescent, or encapsuled stage of their existence.

(To be continued.)

* Leuckart Die Menschlichen Parasiten, Vol. II, p. 512.

EDITORIAL.

VETERINARY INSPECTORS OF MEAT.

Our readers will remember that we have in preceding issues of the REVIEW frequently urged the necessity of the formation of a National Veterinary Sanitary Bureau. It is, therefore, very gratifying to us to see no less an authority than that of the *Medical Record*, of this city, endorsing our views, and urging its establishment under regulations similar to those we have already suggested.

We agree with our contemporary in all the points he has taken in this matter. With him we do not see any necessity for an independent board, which would probably not command for its labors the support that it would obtain if it was connected with either of the existing Department of Agriculture, or, perhaps better, the National Board of Health.

By a recent action of the Secretary of the Treasury, however, a National Cattle Commission having been appointed, the question might arise whether this Commission is not likely to become the nucleus of the Veterinary Board we have been asking for. It is claimed, it is true, that the Commission was only appointed with the object of taking measures against the bovine lung scourge, but we are inclined to believe that its labors will not be limited to that disease, but on the contrary, that they will be much more comprehensive, and include other diseases which are now threatening the decimation of our domestic animals generally.

While considering this question of the regulation of sanitary veterinary medicine, we are brought to the consideration of the relations existing between the veterinarian and the public health in connection with the inspection of meat in reference to its fitness for human consumption as food. A glance at the position of the Meat Inspector in European cities, and in our great metropolis, will show the difference between the two.

How are our Meat Inspectors appointed? What amount of knowledge are they required to possess? With one or two excep-

tions, outside of New York, are the persons appointed qualified for the position? We reply without hesitation, they are not. Politicians, police officers and butchers are those who receive the responsible office which empowers them to condemn or approve the meats brought to market for public consumption.

In Europe, in France for example, we find that these places are opened to competition; and in what does the examination consist? In one case, for a position of Veterinary Inspector of the abattoir of Besancon, the public announcement showed that the candidate would be submitted to four examinations. First—A written report or paper upon a subject of pathology and pathological anatomy. Second—In sanitary inspection and autopsy of animals. Third—Examination, with microscope if necessary, of meats. Fourth—Examination upon alterations of alimentary substances.

European veterinary journals are at various times giving us notice of these examinations, no one being admitted to the competition unless he holds *the diploma of one of the Veterinary Schools* of the country.

By objectors to such appointments here, it has been claimed that our veterinarians were not competent to decide as to the quality of various meats. We cannot, however, entertain such a statement. Thoroughly acquainted, as they are supposed to be, with the various changes incident to diseased conditions, and knowing the lesions that diseased processes leave behind them, their causes and their nature, we hold that no class of persons are better qualified than they for the position. Our Veterinary Schools, by their special curriculum, educate young men in just that particular direction. Veterinary students are not only taught and shown the alterations that will be presented by the meat of diseased animals, but they are more or less initiated in the use of the microscope, and by its aid they can detect many diseased conditions which would escape the attention of those unfamiliar with its use.

The days are gone when veterinary medicine in the United States consisted only in the treatment of diseased animals. The days of the old-fashioned "horse doctor," and "cow-leech," are

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gone by, and within a few years the veterinary profession has taken a foothold amongst us which must become more and more assured every day, and more widely accepted by the public, while the highest positions of Cattle Commissioner and Veterinary Sanitarian have already received acknowledgment of the value and usefulness of their labors. The time has also come when the more modest, but not less useful, position must be created, namely, that of Veterinary Meat Inspector. Boards of Health have Inspectors for most of their specialties, and we are at a loss to learn why, while the physician will make a better *Milk Inspector*, the veterinarian cannot be selected for the position for which, by his professional connection, he has been fitting himself. It is only in the United States that a man is appointed as an "expert," to "inspect" and "appraise" goods or wares which he has never studied or learned.

PLEURO-PNEUMONIA.

At a meeting of the Philadelphia Society for the Promotion of Agriculture, November 2d, Dr. J. W. Gadsden spoke of the proclamation of Gov. Cullom of Illinois, prohibiting the importation of any animals of the bovine species into that State after the 10th instant, from the County of Fairfield, in the State of Connecticut; in the Counties of Putnam, Westchester, Kings and Queens, in the State of New York; in the Counties of Lehigh, Bucks, Berks, Montgomery, Philadelphia, Delaware, Chester, Lancaster, York, Adams and Cumberland, in the State of Pennsylvania; in the Counties of Bergen, Hudson, Morris, Essex, Mercer, Monmouth, Union, Somerset, Hunterdon, Middlesex, Ocean, Burlington, Camden, Gloucester and Atlantic, in the State of New Jersey; in the County of Newcastle, in the State of Delaware; and in the Counties of Cecil, Harford, Baltimore, Howard and Carroll, in the State of Maryland. Cattle from these districts will only be received when accompanied by a certificate of health from a duly appointed Veterinary Inspector.

There is much wisdom in thus restricting traffic from these infected districts. The "Treasury Cattle Commission" have reported the States west of the Alleghanies free from this disease, and it is earnestly to be hoped that each State will follow the example of Illinois, and by this means confine the scourge to the already infected districts.

From present appearances this is the most that can be done. We have never considered the present means and plans sufficient to *eradicate* contagious pleuro-pneumonia from our States. More stringent measures must be adopted before the result can be had. What is being done in any of the States can, at most, but hold the disease in check.

As proof of this we need only refer to Pennsylvania: A short time ago this State was considered to be almost, if not entirely, free from the lung-plague. From the report of Dr. Gadsden and others, however, it appears that in reality a clear bill of health for Pennsylvania is as far off as ever. The passage of cattle from Baltimore into this State has infected new districts, and thus it will ever continue to be until the country sees the necessity of absolute quarantine and more stringent measures. The authorities in charge in the different States are probably doing all in their power—the very best they can—but how much longer must we witness their failure before the Government will appreciate the fact and act upon it that *restriction* is not *extermination*?

One does not need to be very much of a prophet to predict for pleuro-pneumonia in the United States, a speedy and effectual eradication if properly managed; or, if dealt with by present methods, a sure and permanent home upon our soil.

NOTICE.

On account of the crowding of material in this number of **THE REVIEW**, several interesting communications received for publication have to be postponed to our next issue.

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ARMY VETERINARY MEDICINE.

ITS HISTORY ; THE PRESENT CONDITION OF THE ARMY VETERINARY SURGEON ; HIS RIGHTS AS A REPRESENTATIVE OF A SCIENTIFIC PROFESSION, AND WHAT IS REQUIRED BY THE GOVERNMENT TO ESTABLISH AN EFFICIENT VETERINARY DEPARTMENT.

By A. A. HOLCOMBE, D.V.S., Veterinary Inspector U. S. A.

(Continued from page 349.)

This completes a short description of the individuals composing the Army Veterinary Corps—two of them graduates of the American Veterinary College, two of the New York College of Veterinary Surgeons, one of the Toronto Veterinary College, and three of the English College ; while four are not graduates. It would, perhaps, seem ungenerous under the circumstances, to suggest that Army Veterinary Surgeons in the United States should be graduates of American schools, and yet I am of opinion it would only be just to restrict appointments to such. Under existing orders controlling the Department, they must be secured wherever they may be had, but if the Veterinary Surgeon is made a commissioned officer so that the position will be considered worthy of acceptance by the best, the Government owes it to our home colleges to give them first opportunity to supply the army's needs in this regard.

There seems to be some difficulty about filling the vacancies in the Fourth, Tenth, and First Regiments, but whether the fault lies with the applicants, the want of applicants, or with the authorities, I do not know. If the credentials of the applicants are satisfactory, I am not aware of any legal right by which the Secretary of War may refuse to make an appointment, for the law says the first six cavalry regiments shall have *one* Veterinary Surgeon apiece, and the remaining four regiments *two* apiece ; seemingly not leaving the matter to be determined by the inclination of the commanding officer of the regiment, nor the pleasure of the Secretary of War.

But be the cause of the vacancies what it may, there are certainly no inducements for the qualified veterinarian to enter the

army, unless he is young, careless of his opportunities for the future, and anxious to see things at any cost; for he is not a commissioned officer, but is in reality a civilian employed to care for Government property, and being without rank, has no associates except it be the enlisted men of his regiment, or the civilians at his post. He cannot expect nor does he receive any social consideration from the officers. Educated as the great majority of Veterinary Surgeons now are, this exclusion alone is sufficient to deter most from seeking entrance to the army, for the officers make the breach between themselves and the civilian employee almost as impassable as that between them and the men in the ranks. In most instances it matters not what the Veterinary Surgeon's antecedents may have been; he may be a member of one of the best families in the country, a graduate of Harvard and highly accomplished in every respect, yet he must expect to be unnoticed socially, and, if opportunity offers, snubbed, especially by the younger officers. What matters it that they served in the ranks a few months ago, and married their laundress or an officer's servant! They don't know Latin from Greek, nor French from German; they never saw good society, nor do they know what it is, but they have been made a Second Lieutenant, and that *alone* entitles them to a consideration which intelligence and real worth cannot command. They may concede, perhaps, that you were a gentleman until you studied veterinary medicine. *That* was unpardonable. If you had spent half the effort to acquire a knowledge of human medicine, you would have been gladly received as a Surgeon. But you are a "horse doctor!" They really don't know what that is, only that it is something "awfully vulgar!"

And your family fares even worse. It doesn't count with them that you married the accomplished daughter of an ex-army officer, and that your children are the brightest at the post. Neither they nor their mother are considered suitable associates for the ex-laundress and her offspring. And yet all officers have been civilians, have married civilians, and their children, in most instances, marry or become civilians, and *as civilians* they are valued by sensible people at their true worth, irrespective of their profession, providing it is honorable.

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The pay of the Army Veterinary Surgeon is meagre for the service rendered, and entirely inadequate for respectable support. Competence is not to be thought of on a salary of 75 or 100 dollars a month. There is no future to anticipate, for there is no promotion except in the four regiments having Senior Veterinary Surgeons, and this is so inconsiderable that it can scarcely be reckoned an especial honor.

For honorable service, for bravery, for a life worn out, there is no reward. When old age creeps over his powers and renders him unable to withstand that which a performance of his duties demands, he receives the same treatment as the broken-down mule that fails on the march—he is turned out to beg, to starve, or to die, while his family must shift for themselves.

This is in reality the Army Veterinary Surgeon's condition, if one exception is made regarding the pay of the Inspecting Veterinary Surgeon in the Department of the Missouri. It is a disgrace to the Government and to the profession that the Army Veterinary Surgeon is accorded such treatment. The remedy should be enforced through the influence of the profession. It *can* be done.

But let us see what the Army Veterinarians have done for themselves since March 27, 1879!

During the summer of 1880 James Humphreys prepared and circulated among the graduated Regimental Veterinary Surgeons, for their signatures, a bill to be presented, through the Secretary of War, to Congress, which had for its purpose the establishing of an Army Veterinary Medical Department, to consist of—

One Chief Veterinary Surgeon; rank, pay, etc., Captain (mounted). Twenty Veterinary Surgeons; rank, pay, etc., First Lieutenant (mounted). Twenty Assistant Veterinary Surgeons; rank, pay, etc., Second Lieutenant (mounted).

This bill and petition were returned by the Secretary of War with the endorsement that he did not approve of any other Veterinary Department than the one now existing, and therefore declined to present the bill.

Near the close of the year copies of the following letter were mailed to the Veterinary Surgeons of every cavalry regiment:

"FORT LEAVENWORTH, Kans., December 10th, 1880.

"Dear Sir :

"Desiring to see the veterinary profession properly represented in the United States army, and to have the Army Veterinary Surgeon a commissioned officer, I would respectfully ask if you will lend your influence to an endeavor in that direction.

"If so, be kind enough to communicate with me at the earliest convenience.

Respectfully,

"Your obedient servant,

(Signed,)

"A. A. HOLCOMBE,

"*Inspecting Veterinary Surgeon, U. S. A.*"

To this letter I received answers favorable to the project from Veterinary Surgeons Humphries, W. H. Goings, Peters, J. B. Goings, Hingston, Bock and Tempany. From the remaining four I received no answer whatever.

It had been the intention of the author of the above letter to secure the co-operation of all the Veterinary Surgeons in the army in petitioning Congress to do us the justice of passing a law that should make us commissioned officers. But learning of the failure of the petition originating with Veterinary Surgeon Humphries, it was determined to present to the United States Veterinary Medical Association a short account of the growth of veterinary medicine in the army, to enumerate our grievances, and, showing you how little we can hope to accomplish single-handed, ask that you espouse our cause in the interest of all veterinary medicine.

That we are not accorded our just rights, I feel sure you already know. That they are not fully or ably set forth in the following pages of this article, I am sensibly conscious, while the needs of the Government to establish a proper Veterinary Department, as hereinafter set forth, may not meet with your more mature views.

But however much we may differ on minor points, there can be no difference of opinion regarding the stigma which the present Department is to the profession, nor do we doubt but that you can render us such assistance as will make our positions at least respectable and endurable.

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The Rights of the Army Veterinary Surgeon as a Representative of a Scientific Profession.

Veterinary medicine has reached a point of development at which it ceases longer to be a mere art, and its value to the progress of nations can no longer be questioned. The eminent services it has at all times rendered human medicine is a matter of common history, while its recognition as a specialty of general medicine is complete in most European countries.

How much it has added to the wealth and happiness of mankind is beyond computation, and only the student of its history can have a conception of the many influences it has exercised in the development of physiology, therapeutics, and experimental pathology. How greatly it will add to our rapidly growing agricultural interests when it is permitted to exercise its proper influence, is not now determinable, although the General Government has been lately compelled by foreign powers to acknowledge that *veterinary medicine alone* could afford protection to our endangered live-stock interests. It was veterinary medicine in the countries with which we have intimate commercial intercourse that discovered the many sources of danger to which their citizens were subject from the indiscriminate use of meats, and it was their exertions in behalf of their countrymen that directed the attention of the authorities to these dangers. Very properly our Government has sought the assistance of the Veterinary Surgeon to control animal diseases, even though a little coercion was required to effect it. It will be gratifying to the workers in the profession when our Government voluntarily acknowledges the importance of veterinary science as a factor of preeminence in all true political economy.

What the Veterinary Surgeon is to foreign governments he must eventually become to ours, for veterinary surgery in this country is growing with such rapidity that it must soon cease to be a mere *follower* in the lead of others, and become with them a *leader*.

It is unfortunate that this fight for progress must be made without the assistance of a Government that has so many claims

to being considered liberal in the support of all struggling science; for it not only handicaps the professions, but deprives the Government and the people of the untold advantages which must necessarily result from an early diffusion of every newly-gained truth that directly affects their interests.

Our Government, in general, cannot be said to foster the growth of veterinary medicine, but rather, in most instances, to disparage the value of all information coming from that source, and to deride its warnings of danger. That this course has been a costly one to the nation will be readily seen from scanning the official reports of losses from hog cholera, contagious pleuro-pneumonia and other contagious diseases.

The interests which veterinary medicine guard, though receiving, in years past, comparatively more attention from the War Department than from any other department of Government, are very poorly protected in the army; and the present apparent apathy in these matters is no doubt principally due to that absence of individual responsibility, in case of loss, which characterizes the officer in charge of such property, in contradistinction to the owner of private property where a loss becomes a personal one.

The interests of the Government should be considered by the officer as paramount to those of a personal character, and yet a Quartermaster in charge of between \$20,000 and \$40,000 worth of horses and mules, when prompted by a whim, has refused the services of a qualified Veterinary Surgeon employed by the Government at his post, and accepted in his stead the services of a blacksmith! And it would seem that the responsibility for such action, and the subsequent losses which follow, are not subjects for review or consideration by superior officers.

The remedy is not far to seek.

The efficiency of troops, particularly in Indian warfare, is as much dependent on the condition of the horses and mules as upon the men, and the veterinarian's knowledge of sanitary science and police enables him to maintain a standard of health which cannot be otherwise secured, while his acquaintance with diseases and their treatment prevents the extension of contagious diseases, and unusual losses from those that are curable.

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From the standpoint of impartial justice, the services of the Surgeon could as well be dispensed with as the services of the Veterinarian; and could the army horse and mule give expression to their sentiments they would no doubt protest against being deprived of proper medical and surgical treatment, or, being debarred from this, refuse to enter the service at all.

In all foreign countries having any pretensions to a higher civilization, in which an army of any consequence is maintained, the Army Veterinary Surgeon is a commissioned officer. A single illustration in point will be sufficient for our present purpose.

In the English army "the ranks and rates of pay of the officers of the Veterinary Department" are as follows:

- 1.—Principal Veterinary Surgeon, per year, inclusive of all allowances..... £750

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- 2.—Inspecting Veterinary Surgeon.....1 5 0

After 25 years' service.....1 7 0

" 30 " "1 10 0

- 3.—Veterinary Surgeon of the 1st Class.....0 16 0

After 5 years' service as such.....0 18 0

" 10 " " "1 0 0

" 15 " " "1 2 0

" 30 " total service.....1 4 0

- 4.—Veterinary Surgeon on appointment, per year, £250

The relative rank of the officers of the Veterinary Department shall be as follows:

(a.) Principal Veterinary Surgeon shall rank as Colonel.

(b.) The Inspecting Veterinary Surgeon acting as Principal Veterinary Surgeon in India shall rank as Lieutenant-Colonel.

(c.) Inspecting Veterinary Surgeon shall rank as Major; but junior of the rank, except for choice of quarters.

(d.) Veterinary Surgeon, 1st Class, shall rank as Captain.

(e.) Veterinary Surgeon shall rank as Lieutenant.

5.—"The relative rank of these officers shall carry all precedence and advantages (except as regards forage allowance, and in certain cases, choice of quarters), attaching to their correspond-

ing military rank, and shall regulate detention and prize money, allowance granted on account of wounds or injuries received in action, and pensions and allowances to widows and families."

It is true our army cannot be compared to the English in point of *size*, but as regards *efficiency*, that is just as essential to our small army as to any; and a maximum efficiency of the transportation and cavalry service can never be effected without proper veterinary service; and proper veterinary service cannot be secured until the Army Veterinary Surgeon's condition is greatly improved.

That the present Army Veterinary Department is grossly inefficient must be patent to any one acquainted with its composition—a fact that will be conceded, I think, by every Veterinary Surgeon in the army. That the primary cause of the inefficiency is not dependent on the profession is susceptible of the readiest demonstration.

The simple fact that the Government has established a Veterinary Department is her acknowledgment of its importance and necessity; but that she recognizes in herself the cause of the Department's inefficiency, or that she even is conscious of the existence of such inefficiency, is doubtful.

It is reasonable to infer that she considers Gen. Ord. No. 36, '79, as a consummation of her duties to the profession, the Veterinary Department of the army, and herself, and yet she has in reality accomplished but a tithe of what was no doubt expected when the order was issued. It is true the order compliments the profession when it says: only qualified Veterinary Surgeons shall hereafter receive appointments; but the compliment is an empty one unless supplemented by Congress with a law that shall recognize the right of the Veterinary Surgeon to a just compensation for his time and services.

As the matter now stands, the Government has virtually said to the Veterinary Surgeons of the country:

"We are greatly in need of your services. We know you have been educated in a scientific profession to the same extent and at the same cost of time, labor and money as our surgeons. We recognize it is to our advantage to secure the best talent to be

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had, but we can't *pay you* for your time, your outlay and your superior services. We acknowledge that you who have spent eight years of your life at college and three or more learning your profession are the gentlemen we want, but we can give you no more in compensation than we give Michael O'Flynn, the blacksmith, and Terry Flannigan, the butcher. True, they can neither read nor write, nor do they know the value of one therapeutical agent from that of another. Disease to them is as much a mystery as any of the ancient hieroglyphics of the Egyptians, but no matter, the time *was* when we could get no others, and now *you* must take the *same terms* as *they* have had for *twenty years*, for we can't afford to raise *their* pay and rank, we don't like to discharge them, and so we must class you with them."

There can be no justice in such treatment of the Veterinary Surgeon. It can only create a feeling of bitter resentment in a sensitive nature to be told that all your instruction, your labor of years and your higher intelligence count for nothing in the Army Veterinary Department. There is no justice in classing an educated veterinarian with the empiric who is but little above the brute he maltreats, and to deny the former a higher recognition than is conceded the latter, only serves to repel the talent of which the army is in great need.

The Veterinary Surgeon which the Government now has most use for in her service is the one that has every claim to the position of a gentleman, a scientist, and a willing worker. *To secure such the Veterinary Surgeon must be placed upon an equality with the other commissioned officers of the army.*

Until this is accomplished, the Department must remain what it is now—utterly inefficient in so far as the Government is concerned, of but little account to itself, and still less to the profession.

What is Required to Establish an Efficient Army Veterinary Department.

The Army Veterinary Department, as now established, is inefficient for the following reasons:

- 1st. There are no inducements offered by the Government to

secure the services of even *average* veterinary practitioners, and as a consequence there is but little real ability in the Department.

2nd. There is no effective attempt made to secure the interest of the Veterinary Surgeons who are serving in the army. There is no stimulus to do more than necessity demands.

3rd. Some of the Veterinary Surgeons are incompetent to practice in any place or under any circumstances.

4th. The Veterinary Surgeon's authority is too limited to allow his services to become fully effective.

If, then, the Department is to be made of any practical value to the army, the existing obstacles must be overcome. Let Congress place this Department on a level with the Medical Department and there will be no difficulty in securing the services of the ablest veterinary surgeons—men who will be of indispensable value to the army, to the profession and to the country.

There is a great plenty of work for them to do. I do not mean simple *routine practice*, but that higher labor which begins with investigation and results in discoveries of importance to all mankind.

Until the opportunity is offered, this work will not be accomplished by the Veterinary Surgeons of the army, and the stimulus will consist in a *salary* that will at least preclude want, a chance for *promotion*, the privilege of *retirement* after a prescribed length of service or from old age, and a *pension* to his family in case of death.

All these conditions and privileges are denied him to-day. It is time the army had rid herself of all incompetent surgeons, it matters not whether they are graduates or non-graduates.

In the future none should be appointed unless their abilities are known to be at least up to the average. The simple fact that the candidate has graduated from a veterinary college is by no means conclusive evidence that he will prove an efficient surgeon for the army. *His adaptability for the service should be tested before he receives permanent appointment.*

When the Army Veterinary Surgeon is made an officer whose professional opinion shall carry with it the authority vouchsafed now to the Army Surgeon, his services may become effective. As

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it is now, he can only make suggestions which may or may not be complied with. If his commanding officer, even though but a second lieutenant who has no knowledge of the habits, diseases or abilities of the animals in his charge, sees fit to ignore his directions, the inevitable is to submit. If the same officer chooses to do without your opinion entirely, you have no alternative. The Veterinary Surgeon is a sort of convenience whose services may be used or dispensed with at will. He may stand by and witness the death of the best horses in the service, brought about by the malpractice of an ignorant blacksmith, and yet powerless to interpose an authority that could have the least weight in saving the life of a public animal.

The personal animosity of the officers in charge permits him to vent his spite at the expense of the Government. It has happened under my own observation, and I have no doubt in other instances. It is an expensive pleasure which can be curtailed by making the Veterinary Surgeon a commissioned officer.

The present constitution of the Veterinary Department renders it impossible for the general results of the employment of skilled veterinarians to be even approximately determined. But a small percentage of the public animals have the benefit of a Veterinary Surgeon's care, and many of these under such adverse circumstances that only a comparatively limited good result is appreciable.

Assigning one Veterinary Surgeon to a cavalry regiment which is divided into two, three or more battalions, serving at as many different posts, sometimes hundreds of miles apart, is a most imperfect providing of veterinary attendance.

The Veterinary Surgeon in such cases is generally stationed at headquarters of the regiment with, as a rule, not more than 50 per cent. of the horses belonging to the regiment. The other 50 per cent. are deprived of medical attendance, unless there happen an outbreak of some contagious disease amongst them, when it is customary for the Veterinary Surgeon of the regiment to visit them. If such an outbreak happen in all the battalions at once, then the chances are that but the animals at headquarters will receive proper attention, or if otherwise, all may receive an imperfect attention.

Nor should the Veterinary Surgeons be confined to cavalry regiments alone. His services are just as essential in the light Artillery and Quartermaster's Department. Unfortunately there are many small posts garrisoned by the army, so that too many of the commands are so small as not to warrant the employment of veterinary attendance for the sick. But it is the opinion of prominent army officers that in a few years time troops will be stationed in large garrisons, the smaller posts being abandoned. When this is effected, the veterinarians' services will be more effective; and, to guard against the danger of congregation, violated laws of hygiene, and the disasters of contagion, more necessary than now.

The army now needs at least the following officers to constitute a proper Veterinary Department:

1. *One* Chief Veterinary Surgeon.
2. *Ten* Inspecting Veterinary Surgeons.
3. *Ten* Senior (Regimental) Veterinary Surgeons.
4. *Ten* Junior " " "

The rank, pay, etc., of the 1st should be that of a Major.

The " " 2d " " Capt. of Cavalry

The " " 3d " " 1st Lieut. of "

The " " 4th " " 2d " "

After a service of five years the Junior should be entitled to rank and pay of a Senior.

At the end of ten years total service, the Senior should be eligible for promotion to Inspector, in event of a vacancy.

On completing twenty years of service the Inspector should be eligible for promotion as Chief.

The Chief Veterinary Surgeon should be stationed at Washington, D. C. His duties should consist in the examination (as *one* of a Board) of all candidates for commissions and promotions; the revision and supply of all requisitions for veterinary medicines, instruments and dressings; the inspection, tabulation, etc., of all reports; and, when necessary, the investigation and direction of the treatment of diseases.

Inspectors should be stationed at headquarters of military divisions and departments. Their duties should consist in the

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inspection of all animals presented for purchase to the Government; the inspection of all animals recommended for condemnation, sale or destruction (unless inspected by a Junior or Senior); the revision, with recommendation, of all requisitions for medicine, instruments and dressings, and the investigation and treatment of any diseases which may occur in the department or division requiring their attention.

Seniors should be assigned to duty in regiments of cavalry. Juniors should do duty at whichever posts are most in need of their services.

Although the department would consist of but 31 members, their work could be made very effective. On the part of the profession, I believe our claims are moderately stated, while I am confident from my short army experience the Government would be highly benefitted.

My intercourse with the officers of the army has, in nearly all instances, been very pleasant indeed, and the presence of highly educated Veterinary Surgeons as officers of the army, I believe, would be welcomed by them as a valuable acquisition to the service.

In conclusion, let me beseech you to exercise, in behalf of myself and colleagues, the influence of your Association, in that we may accomplish an improvement in our condition, and effect that recognition of our rights which we believe is due to us.

Fort Leavenworth, Kan., Sept. 5th, 1881.

COMPARATIVE PATHOLOGY.

UPON THE PARASITISM OF TUBERCULOSIS.

BY M. TOUSSAINT.

The following note is extracted from the *Comptes Rendus de l'Academie des Sciences*:

"After having obtained, in a purified glass bottle, the blood of a tuberculous cow, I placed the serum found after coagulation into Pasteur's tubes, containing bouillons of cat, pork, and rabbit meat. Pure serum was also placed in a separate tube and placed

in the drying stove. After several days most of these liquids offered very small granulations, simple, germinated, or gathered in small masses. I made second cultures, and afterwards inoculated to young kittens; these animals live with difficulty in captivity, and all died from exhaustion, before it was possible to observe tuberculosis. Five months after having collected the serum, I had occasion to inoculate two other cats, almost adult, with the contents of a syringe of Pravaz, with the serum, which had been kept for several weeks in the drying stove, and which presented spherical granulations. The two cats were killed 47 days after inoculation.

"One of them showed a local lesion, quite well marked, and a voluminous prescapular ganglion; but the lung contained no tubercles. The second presented the same local or ganglionic lesions, and besides, some twenty very small tubercles, here and there, in the lungs. The microscopic examination showed that it was true tuberculosis. I only mention this fact to show the duration of the preservation of the tuberculous virus. This experiment is evidently insufficient to prove the existence of the microbe.

"The 1st of March I killed a young sow, which had eaten four months before, in two days, the lung of a cow, which weighed 39 kilog. (about 78 pounds), which came from a slaughter-house. The sow had well-developed tuberculosis. * * * I saved, with all the care necessary in such cases, some of the blood and pulp of the pharyngeal, pulmonary and intestinal ganglions, and I made a culture in seven bottles, containing slightly alkaline bouillon of rabbit. As early as the next day they were cloudy, and all contained one and the same microbe. These cultures, carried to the 10th, all preserved their purity. The activity of the growth lasts from 10 to 15 days, after which the fluid clears off, and the microbe fall to the bottom of the bottle and form a deposit slightly yellow in color. Their refringency is then greater than at the beginning of the experiment, and their diameter has diminished, becoming a little below that of the microbe of chicken cholera.

"The first inoculations of these cultures were made on rabbits,

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in the subcutaneous connective tissue. All were negative, except one, which was made with the fluid of a third culture. A rabbit killed accidentally by a dog, on the 33d day, showed in the lung a few tubercles of true histological character. But when cats were inoculated in the peritoneum, the results were different. Here, again, the animals died from exhaustion, after a month of captivity, during which time they were constantly fed on well-cooked meat. The first cat which died had enormous intestinal ganglions, even caseous in some places; but at that time the tuberculosis was not yet generalized. After scraping with a scalpel a section of the ganglions, the pulp and the serosity were inoculated in the ears of eight young rabbits, all of whom became tuberculous. After two months the infection was general, the lungs and spleen being filled with grey tubercles. The first rabbits killed were used for the inoculation of a second series of rabbits, which all present now the symptoms of tuberculosis. Two rabbits of the first series will be preserved until they die, in order to furnish the last and final lesions for examination."

EXTRACTS FROM FOREIGN JOURNALS.

ACUTE JAUNDICE OF SHEEP.

BY PROF. ROLOFF.

Researches made at the Veterinary School of Berlin have proved that acute jaundice in sheep fed with hay containing lupine may be sometimes compared to the acute yellow atrophy of the liver, and at others to the acute intoxication of phosphorus. Animals succumb after one or two weeks, or but partially recover, with an atrophy of the liver. Less frequently their recovery is complete. When fed for a long time with samples of lupine, whose dangerous properties are less active, an interstitial hepatitis follows. The urine contains biliary coloring matter; is almost always albuminous, and contains often hyaline or granular cysts. It is, however, a remarkable fact, that notwithstanding the frequently enormous atrophy of the liver, the urine does not cease to contain urea or hypuric acid, but neither leucine nor tyrosine

can be found in it. In respect to the point of view of the dissemination of the lesions, this affection may be compared to acute infectious diseases; indeed one finds the glandular elements of the liver, kidneys and spleen; the fibres of the myocardium and of the striated muscles in a state of tumefaction, with the icteric coloration of most of the tissues in diffused hemorrhages.

Lupine manifests its deleterious action as well on the horse, the goat, and the dog. Its toxic principle is soluble in ether, alcohol and glycerine, and it is easily soluble in pure and slightly acidulated water, and very much so in alkaline liquids. When lupine is exposed for ten consecutive hours to a heat of 120°, or is boiled during four hours under an excess of pressure of from one to one and a half atmospheres, its toxic power is diminished, but not destroyed; the distilled fluid still contains a portion of it. The preservation of the plant in a well-dried medium seems to increase rather than diminish its deleterious properties. According to this, it is probable that the toxic agent is an organic acid or a glycoside.—*Centralbl. f. die Med. Wiss.*

DURATION OF IMMUNITY AFTER CONTAMINATION.

BY PROF. SEMMER (DORPAT.)

After mentioning the recent researches of Messrs. Toussaint, Chauveau, Arloing, Cornevin and Thomas in preventive inoculations, the author says, that with the assistance of Prof. Raupath, he has also succeeded in rendering sheep refractory to vaccination, after having injected them, through the jugular, with some drops of vaccinal lymph taken from an animal of the same species, or after injecting them under the skin with some of the same lymph mixed with blood, exposed to a heat of 55°—or a bouillon containing bacterias in suspension in the vaccinal lymph, cultivated at a temperature of 40°. All the animals thus vaccinated had the characteristic febrile reaction of variola, but no eruption. This then is one step forward in the generalisation of the method recommended by Pasteur, to impart, without great risks, immunity against many of the prevailing contagious diseases.

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immunity thus gained, it may vary according to the disease. For contagious septicemia of rabbits, it lasts scarcely three months; and for anthrax it seems, according to Semmer's observations, very limited.—*Central f. die. Medic. Wiss.*

CONTAGIOUS PYÆMIA OF RABBITS.

BY PROF. SEMMER.

The author inoculated rabbits with anthrax blood, heated first at 55°. This was on the 29th of April. On the 2d of May one died, the autopsy showing that death was caused by pyæmia, and not by anthrax, or septicemia. At the point of inoculation, an abscess had formed containing very dense pus. The deep seated organs were ecchymosed and had infarcti. The blood, of a normal color, was rich in leucocytes, the hematics being ragged, and surrounded by the micrococci, which were also found in the serosity of the blood and of the pus.

Another rabbit, inoculated with the blood of the first, died in six days. At the point of inoculation an abscess was formed, full of concrete pus, in the center of which were seen numerous micrococci; but no imbibition of tissues, nor serous transudations; no putrefaction and none of the lesions of septicemia. With the pus and blood of the second rabbit, a third was inoculated, and also in the same manner a series of nine animals. All, at the post-mortem, exhibited the same microscopic alterations. Comparative inoculations, made with ordinary pus, always gave negative results.

The above, Prof. Semmer concludes, establishes the existence of a contagious pyæmia, essentially different from septicemia, as it does not give rise to a rapid putrefaction of the cadaver; to the dissolution in mass of the red corpuscles; to œdematous imbibition of the tissues, or to the serous transudations. The disease has for its germs small moving micrococci, which are especially abundant in the pus, blood, liver and kidneys. The contagious power and malignant character of the disease are not inferior to those of septicemia and anthrax.—*Central f. die. Medi. Wiss.*

EQUINE DISTEMPER,

(INFLUENZA ERYSIPELATOSA EQUORUM. FEBRIS CATARRHALIS
EPIDEMICA* CONTAGIOSA EQUORUM).

BY PROFESSOR DIECKERHOFF, BERLIN ROYAL VETERINARY SCHOOL.†

Since the spring of the present year, the equine population of France and Germany has been visited by an epizootic, which, in the literature of the last few years, has been principally discussed under the title of "Influenza," or a particular form of influenza.

Its character and nomenclature are subjects upon which professional men hold the most contrary views. In the hope of assisting to solve these difficulties, I venture to offer a few general remarks upon the disease to the readers of this journal.

The history of veterinary science shows the malady to be by no means a new one. Solleysel observed it in Germany in 1648. It was widely diffused over Western Europe in 1688 and 1699. Great numbers of horses were affected in Europe in 1711 and 1712; again in 1732, as well as in 1767 and 1776. In 1786, breaking out afresh in Hanover, it gradually extended to Southern Germany and Italy. When in 1804 and 1806, it visited Denmark, Germany, Italy, and other portions of Western Europe, it received a great amount of attention from the veterinarians of that time. They bestowed upon it such names as, Influenza, Nervous Catarrhal Fever, etc. In the ever-memorable years of 1813 and 1814, the Russian army imported it into North Germany, from which circumstance it became known as the "Russian horse-sickness." The years 1824 and 1825 were characterised by its general distribution in France and South and West Germany. Girard designated it "Gastro-Entérite," whilst in Germany it was frequently spoken of as "The French-sickness." "Horse-typhus," "Pulmonal-typhus," and "Typhoid Influenza," are others of the many terms which it has at various times received. In 1851 North Germany, and especially Berlin, were once more the seats

* Epizootica (!)—Translator.

† Translated from "Adam's Wochenschrift für Thierheilkunde und Viehzucht." September, 1881. By W. F. Garside, M.R.C.V.S.

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of its ravages. In the Austro-Prussian campaign of 1866, it was very prevalent amongst the cavalry horses at Vienna. Roll described it as the "Catarrhal form of Influenza." In the autumn of 1869 it was observed in St. Petersburg, and in the beginning of the following year made its appearance at Dorpat and the neighborhood, where it was studied by Jessen, who named it influenza. Very soon afterwards the extensive transport of horses from Russia, consequent on the Franco-German war, was the means whereby it again gained access to Germany. Proceeding onward from east to west, it soon reached other parts of Germany, as well as Belgium and France. The horses of the occupation-army were for several weeks in the spring of 1871 the victims of its ravages, and as the German legions withdrew, it followed them to South Germany. England was the next country invaded, the horses especially in the large towns suffering severely in 1871 and 1872. When in 1872 it made its appearance in the New World, it created a great stir and sensation. To me it seems not at all improbable that the contagion was conveyed from England to Canada, where it first broke out. In a few weeks it had reached the principal towns of the United States, where the immense losses it occasioned soon attracted the attention of the press, whose accounts of the disease were in all probability greatly exaggerated. The *American Veterinarian* regarded it as a new disease, and described it as "Influenza," or as "Epihippic Fever." The German dailies soon came to speak of it as the "American horse-sickness."

From France we learn that the disease was very prevalent during the early months of the present year, especially in the capital. The French veterinarians applied to it the terms "Gastro-enteritis," or "Gastro-hapatitis." During the previous month it broke out in Alsace, in Baden, and in Bavaria (Munich).

In Berlin it was noticed at the commencement of last June, since when it has spread to many large horse establishments, and at the present moment is still extending its area. The Berlin Omnibus Company possesses 1,050 horses, stabled in five depots, four of which the disease has gradually invaded. Up to the present time 497 horses have been affected, the greater portion being now,

however, convalescent. Thirteen cases have terminated fatally. In several other large establishments the mortality has reached ten to fifteen per cent., in others the loss has been very trifling; so that perhaps about five per cent. may be taken as representing the average mortality amongst affected animals.

In this short essay my intention is not to enter into a discussion as to the pathology of the malady. I shall content myself with saying that it is a specific, contagious, infectious febrile disease running an acute course. Its origin is always to be traced to contagion. Other causes take no part in its production. Infection results as a rule from the expired air of diseased or convalescent animals. It may, however, arise from a veritable transmission of the contagion by persons from diseased to healthy animals. After infection, five to six days usually elapse prior to the first symptoms becoming manifest. Convalescence occupies very often one to two weeks, relapses during this period, however, being by no means unfrequent. Those horses which at the commencement of the disease are taken off work, placed in suitable, well-aired stalls, and carefully attended to, have almost without exception the disease in a mild form; whilst, on the other hand, horses which continue to be subjected to exertion, or are maintained in close overheated stables, invariably suffer to a much greater extent.

About ten per cent. appear insusceptible to the contagium, and fifteen to twenty per cent. of the affected ones suffer only slightly.

The following are the most important changes occurring in the organs of the body of an affected animal:—

1. *Fever*, in which the internal temperature rises from 103°, 105°, 106°, and even 107.2°. The external temperature is changeable, the coat stares, but shiverings (*Schüttelfrost*) or muscular tremblings are never observed.

2. *Myocarditis parenchymatosa*, which I regard as the most dangerous element in the disease, occasions an increase in the frequency of the pulse, which varies from 56 to 60 in mild attacks, to 90, 100, and 120 in severe ones.

3. *Superficial catarrh of the respiratory mucous membrane*,

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with nasal discharge, slight tumefaction of the submaxillary lymphatic glands, and easily-induced cough.

4. *Erysipelatous inflammation of the conjunctiva palpebrarum*, with œdematous infiltration, especially in the mucous folds between the cartilago-nictitans and the bulb of the eye.

5. *Erysipelatous inflammation of the gastric and intestinal mucous membranes*, which disappears, as a rule, with the lowering of the febrile heat. The digestive mucous membrane is, during the first few days, œdematous and infiltrated with a yellow fibrinogenous fluid, to which the swollen condition is due. Peyer's patches are also involved in the swelling. In the very severe cases in which death takes place during the height of the fever the connective tissue of the mesenteries appears œdematous, and the abdominal cavity contains a yellowish fluid.

6. *Hepatitis parenchymatosa*, with extensive swelling, partial icterus, fatty infiltration and degeneration of the liver substance.

7. *Myositis*, to which may be traced the *prostatio virium* and the unsteady gait often observed. Coupled with congestion of the lungs, it also occasions the frequent but not invariably increased frequency of the respiratory movements.

8. *Erysipelas phlegmonosum* of the extremities, and in males of the external genital organs. In mild cases this is, however, often absent.

9. *Congestion of the brain and spinal cord*.—The kidneys and spleen are, as a rule, only slightly affected. Sometimes death takes place about the second or fifth day from the commencement of the disease, and is then the result of cardiac weakness, or in some cases cerebral paralysis. During convalescence, complications of a fatal nature often arise, the most frequent and serious of which is broncho-pneumonia. Continuous intestinal inflammation (diarrhœa) or laminitis, during the second or third week, are likewise occasional causes of death; whilst in some cases the animals perish from the enormous erysipelatous phlegmon in the subcutis and aponeuroses, or as a result of paralysis of the posterior extremities.

The foregoing characteristics will suffice to show the specific and contagious nature of this malady, as well as the fact that it

has nothing in common with pleuro-pneumonia contagiosa equorum. The view held by some authors that both diseases are different forms of primary disease (influenza), is therefore untenable. But in Germany, for many years past, the contagious pleuro-pneumonia of horses has been spoken of as influenza. It would, therefore, be devoid of purpose to apply the same term to the disease under consideration.

Now, it may be suggested that it would be better, inasmuch as the pleuro-pneumonia of horses has so many analogies with the croupous pneumonia of the human subject, as well as with the lung disease of cattle, to dispense with the word influenza altogether, as applied to this disease, and speak of it simply as "pleuro-pneumonia contagiosa equorum." Whilst acknowledging the justice of the principle, I feel bound, on practical grounds, to object to its adoption.

I therefore propose to the German veterinarians that we should name the present disease "Equine Distemper" (*Staupe der Pferde*), and retain for the other disease "Equine Chest-disease" (*Brustseuche der Pferde*). The word "distemper," which in itself expresses nothing further than a "disorder," for scientific purposes can easily be limited to a specific disease. In medicine such words as plague, lues, influenza, have come to be applied to special diseases of the human subject. That the word "distemper" is already used to express a disease of dogs is no argument against my proposition. Human plague (*Die Pest der Menschen*) is another disease to cattle-plague, and no veterinarian would find any difficulty in conceiving "equine distemper" as a different disease to "canine distemper."

[Far from having been confined to the countries mentioned in the preceding lines, this malady has been exceedingly prevalent in this country, and especially in London, during the present year, and has not yet left us. From personal observation, I can testify to the identity of the disease here and on the Continent. It seems somewhat surprising that no communication should have been made to the journals in reference to its presence amongst us.

Professor Dieckerhoff will, I know, pardon my drawing his attention to the fact that Professor Williams has in this country

already insisted on the difference between this malady and epizootic pleuro-pneumonia of horses; for in speaking of the latter in "Veterinary Medicine" he says, "Erroneously called influenza, it has seemingly and for some time taken the place of this affection, from which it differs very materially. The true uncomplicated influenza is a disease of the mucous structures; this affects the serous covering and substance of the lungs."

"Horse Distemper" is a term which has also already been applied to this disease in England—[TRANSLATOR].—*The Veterinary Journal*.

CLIPPINGS OF PRACTICE.*

HYDROPHOBIA IN THE HORSE.

BY MR. F. MANS.

I was called to visit a horse, supposed to be affected with colic. At my arrival, he presented no abnormal appearances, except a slight injection of the conjunctiva. According to the statement of the owner, he was making frequent efforts to micturate, which brought on only a few drops of water. The animal looks often toward his flank, and is constantly agitated. To satisfy the owner, rather than to relieve the patient, which I did not believe to be sick, I prescribed some aconite, and left directions that I should be informed if any new symptoms appeared. The next day, in the evening, being called again, I found the animal walking. His appearance has some character of proudness; his walk is hurried and the head is carried elevated. He neighs every instant, and the slightest noise attracts his attention. Returned to the stable, I find his pulse regular and slightly accelerated; the conjunctiva is injected; the respiration normal. Left to himself, he makes efforts to urinate, and constantly bites his right fore-arm, or gnaws the rope of his halter. From this moment I began to suspect hydrophobia.

Inquiring if the horse had ever been bitten by a mad dog, the

* From the official reports of the Departmental Veterinarians of Belgium.

owner, who first denied it, at last said that about two months previously he had a dog which for two or three days had taken no food and had bitten whatever objects were presented to him; this dog, after showing signs of paralysis, was destroyed, but not until after he had bitten the horse on the lower lip.

During that night my patient was much agitated. He bit his manger in his rage; nipped his fore-arm; frequently laid down and got up; constantly trying to make water. A peculiar symptom is, that it was sufficient to slightly press upon one of the bars in the mouth to make the animal fall. He would then roll two or three times from left to right, then rise again and tremble. His gait was always staggering, when he was compelled to walk.

At the post mortem, the stomach was found empty, without lesion, and the laryngo-pharyngeal mucous membrane somewhat injected.

TUBERCULOUS OPHTHALMIA.

By M. MATHIEU.

This disease has been but imperfectly studied in veterinary medicine. The presence of tubercles in the eye had been observed, but tuberculous ophthalmia has never been described. The four cases observed by the author have enabled him to supply this want, which is of so much the more importance, as it is a sure evidence that phthisis pulmonalis, sometimes so very difficult to diagnose, exists with it.

At the outset, it is manifested by a slight flow of tears, often overlooked. After a while, if the eye is closely inspected, the iris is observed to change color. It becomes greyish, the surface is bosselated, and seems closer to the cornea; its small circumference becomes irregular; the pupil contracts, and soon disappears completely. The iris then forms a complete diaphragm. During the disease the animal suffers intensely. The flow of tears is abundant; the eye-lids remain constantly closed; the iris assumes a yellowish tint, and especially where the tuberculous deposits exist. The cornea is but little changed, and re-

mains transparent until the death of the animal. This tuberculous ophthalmia, in the four cases observed by the author, took place in one eye only, and did not improve under any form of treatment. On the contrary, it grew worse with time. After death, the iris of the diseased eye is found much thickened. Its surface is roughened, and the color of a yellow grey; incised, it shows tuberculous granulations, offering all the changes through which these mioplasm pass in other parts of the body.

Mr. Mathieu says that tuberculous ophthalmia has enabled him to diagnose phthisis in a cow, though physical signs of the chest did not show that there was positively anything abnormal in the chest.

VOMITING IN THE HORSE.

BY MR. PUTZEYS.

Being called to a horse which was taken with vomiting while eating grass in an orchard, the author observed that the patient presented all the symptoms of vomiting every time he swallowed some mouthful of grass, or of any other food. Before passing these, a dilatation, varying in size, was easily observed in the inferior part of the œsophagus, and still the most minute exploration of the œsophageal organs failed to detect the presence of a foreign body. Believing, however, that some body was detained in that canal, the probang was used. It very readily passed down into the stomach, but no improvement of the animal could be observed. The diagnosis was not given up, however, as it was supposed that probably the probang had passed on the side of the foreign substance. Remembering that after each ingestion of a mouthful of food there was a notable dilatation of the cervical portion of the œsophagus, and attributing it to an accumulation of matters in front of the foreign body, the author concluded to try the use of these as a tampon. After exciting dilatation of the organ by a few mouthfuls of food, he immediately introduced the probang, using it then as a ramrod, and succeeded at once in pushing the accumulated mass into the stomach. From that moment the vomiting ceased.

ABSCESS OF THE LIVER.

BY M. VAN AUTGARDEEN.

Called to make the autopsy of a cow, he learned that the symptoms she had presented had caused her to be suspected of being affected with pleuro-pneumonia. The cause of the morbid manifestations was found in an enormous abscess, involving the left half of the liver, and which had perforated the diaphragm, which was adherent to the base of the corresponding lung, which, in turn, was hollowed by a cavity of the size of an egg, and was full of pus, and communicated with the hepatic abscess. All around this cavity of the lung the pulmonary tissue was considerably thickened, and presented the character of hepatization.

ACUTE HYDROCEPHALUS.

BY M. STUBBE.

The following case is thus reported by the author: "This patient, a mare, used for heavy draught, nine years old, fed on grass, is said to have been for the last eight days duller than usual, and showed some difficulty in turning.

"On examination, she is noticed carrying her head drooping; the pulse is about normal; the conjunctiva scarcely altered; respiration and mastication slow; defecation rare; *general sensibility increased*. At times, the head is suddenly raised, as if the animal was frightened; locomotion difficult.

"*Diagnosis*.—Cerebral affection, of unknown nature.

"*Treatment*.—Bleeding; drastic drenches; cold applications on the cranium; setons on the neck; stimulating frictions on the extremities; steam baths under the abdomen; stimulating lavements; stabling cool and dark.

"Notwithstanding this treatment, the symptoms increased; the torpor became more marked; the head hung low down, and was raised with difficulty, the animal resting it on the manger; movement is more difficult; general sensibility increased; pulse and respiration remain normal.

"*Prognosis.*—Very unfavorable.

"*Diagnosis* changed to compression of the brain by neoplasy or exudation.

"*Treatment* continued, adding tonics and laxative stimulants.

"The third day the animal is found lying down, eyes partly closed, pulse small and accelerated, respiration rapid, short and moaning, conjunctiva injected; death during the night.

"*Post Mortem.*—Softening of the brain substance (œdema); exudation under the arachnoid of sero-bloody matter; similar one in the ventricles; congestion and œdema of the left lung, a part of which is gangrenous; liver congested."

PECULIAR BALANCING MOTION OF THE WHOLE BODY.

By M. SCYLER.

This curious condition was observed in a robust, plethoric animal, without being able to connect it with any organic lesion. It reads as follows: Called in the night, Mr. S. visited the patient at the stable and found him affected with a continued lateral trembling. This movement was limited at times to the anterior, and at others to the posterior parts, while at others it would affect the whole body. During this trembling, the animal tried to support himself against the wall. Was bled, not without difficulty, and received a drastic of aloes and croton oil. The next day the horse seemed perfectly well, having laid down and passed a quiet night. Twelve days later he was again taken with a similar, but more severe, attack, and the same treatment was ordered. Forty-eight hours after, he was free from trembling of the body, but with movement of the legs. The next day the animal got up, and has since continued his work, in apparently perfect health. What was the cause of those symptoms? is the question concluding the report of this unusual case.

TETANUS.

Chloral seems to have been the remedy, *par excellence*, in this disease, in the hands of several veterinarians of Belgium.

Messrs. *Roman* and *Lonhienne* give it in doses of 60 grammes (about 2 ounces) every day, combined with friction on the head and hypodermic injections every 4 hours, in doses of 2 grammes daily.

Roman has given 80 grammes per day, placing his patient in a dark stable, covering him well, giving him plenty of water, and arranging an apparatus to allow him to rest without becoming fatigued (probably slings).

François has also used chloral in a case where all other agents failed to give any relief. He also treated a cow with it, which recovered; her case was one of traumatic nature, supposed to be the result of a fall.

SOCIETY MEETINGS.

MONTREAL VETERINARY MEDICAL ASSOCIATION.

The first regular fortnightly meeting of this Association was held in the lecture room of the Veterinary College, 6 Union Avenue, on Thursday evening last, Mr. M. C. Baker, V. S., 1st Vice-President, in the chair. After preliminary business the following gentlemen were ballotted for and duly elected members: Messrs. E. P. Ball, Henry Kingman, George Kennicks, T. A. Bishop, J. E. Gardner, and W. H. Klock. Messrs. John Henry, Jr., and C. P. Drake were proposed as members.

Professor Osler, of the McGill University, then delivered an address in which he gave an account of his recent visit to England, during which he attended the meetings of the British National Veterinary Congress as the representative of this College. He gave an interesting *resume* of the proceedings of the congress, and paid a high tribute to the zeal and professional ability of the President, George Fleming, F. R. V. C. S., to whom, with Mr. J. H. Steel, the unqualified success of the congress was in a great measure due. He also referred to the pleasing fact that the profession had taken a forward step there in securing status and protection by the passage of the Veterinary Surgeon's bill. In the discussion which followed, Mr. C. J. Allo-

way, V. S., referring to the state of the profession in this province regretted very much that no such protection was given to the profession here. Having been informed that the Lieut.-Governor, by an act recently passed by the local Legislature, possesses discretionary powers in this matter, he therefore moved, seconded by Dr. Wm. McEachran, "That the Principal of this College be requested to call a meeting of the qualified Veterinary Surgeons practising in the Province of Quebec, for the purpose of taking steps to secure the most favorable legislation possible for the protection of qualified Veterinary Surgeons in this Province."

Professor McEachran was then called on to read his paper on a disease which has prevailed in the County of Pictou, Nova Scotia, for the last thirty years. He described minutely the history, symptoms and *post mortem* appearances of the disease, as observed by himself in 1880, and by Dr. Wm. McEachran in 1881. He indicated that the disease was "dropsical" in its character, and promised at a future date, after the present investigation which is being held by the Dominion Government is completed, to lay before the Association all the facts connected with this disease, which is one that has hitherto had no place in Veterinary nomenclature.—*The Gazette*.

The regular fortnightly meeting of this Association was held last Thursday evening, at the Veterinary College, Dr. Wm. McEachran, 2d Vice-President, in the chair. Messrs. C. P. Drake and John Henry, Jr., were elected members and Mr. E. Crundell was proposed as a member. After preliminary business, Mr. Alexander Glass was called upon to read his communication on Influenza. He described a very interesting case, which was complicated by a peculiar rash which Mr. Glass considered to be scarlatina. A lively discussion followed, after which Mr. M. C. Baker, V.S., read an interesting paper on the subject of "Foot and Mouth Disease," a subject which Mr. Baker, being Government Inspector at this port, has paid great attention to. He described fully the history, causes, symptoms, treatment and consequence of this disease, which caused loss not only from the direct loss by death, but also from the loss in condition, quality

and milk. He fully described the various means to be adopted in preventing the introduction of, and stamping out of the disease when present in any country. He was pleased to state that this disease was unknown in Canada at the present time, and with the present efficient system of quarantine was sure that it was next to impossible for this or any other contagious disease to obtain a foothold in Canada. A lively discussion followed the reading of the paper, in which many interesting points were brought out by the members as to the transmissibility to man, the use of flesh for human food, etc. A vote of thanks was passed to the readers of the papers. At the next meeting, Mr. D. E. P. Campbell will communicate a case, subject, "Injuries to the Eye," and Dr. Wm. McEachran will read a paper on the subject of Tetanus.—*The Gazette*, (Montreal).

PLEURO-PNEUMONIA.

PROCLAMATION ISSUED BY GOVERNOR CULLOM.

STATE OF ILLINOIS, EXECUTIVE DEPARTMENT,
Springfield, Ills., November 1, 1881.

In pursuance of the Act of the General Assembly of the State of Illinois, entitled "An Act to suppress and prevent the spread of pleuro-pneumonia among cattle," approved May 31, I, Shelby M. Cullom, Governor of the State of Illinois, do hereby proclaim that I have good reason to believe that pleuro-pneumonia among cattle has become epidemic in certain localities in the States of Connecticut, New York, Pennsylvania, New Jersey, Delaware, and Maryland—viz.: In the County of Fairfield, in the State of Connecticut; in the Counties of Putnam, Westchester, Kings and Queens, in the State of New York; in the Counties of Lehigh, Bucks, Berks, Montgomery, Philadelphia, Delaware, Chester, Lancaster, York, Adams and Cumberland, in the State of Pennsylvania; in the Counties of Bergen, Hudson, Morris, Essex, Union, Somerset, Hunterdon, Middlesex, Mercer, Monmouth, Ocean, Burlington, Camden, Gloucester and Atlantic, in the State of New Jersey; in the County of Newcastle, in the

State of Delaware; and in the Counties of Cecil, Harford, Baltimore, Howard and Carroll, in the State of Maryland; and I hereby, as required by said Act, prohibit the importation of any domestic animals of the bovine species into this State from the aforesaid Counties in the States of Connecticut, New York, Pennsylvania, New Jersey, Delaware and Maryland, after the 10th day of November inst., unless accompanied by a certificate of health properly signed by a duly authorized veterinary inspector. Any corporation or individual who shall transport, receive or convey such prohibited stock shall be deemed guilty of a misdemeanor, and upon conviction thereof shall be fined not less than \$1,000 nor more than \$10,000 for each and every offence, and shall be liable for any and all damage or loss that may be sustained by any party or parties by reason of the importation or transportation of such prohibited stock. (Sec. 4 of Act approved May 31, 1881.) In testimony whereof I hereto set my hand and cause the great seal of State to be affixed. Dated at the City of Springfield, the day and year above written.

By the Governor:

S. M. CULLOM.

HENRY D. DEMENT,
Secretary of State.

CORRESPONDENCE.

POISONING FROM STRYCHNIA.

Mr. Editor: In the October number of the REVIEW appeared an article entitled "A Case of Poisoning from Strychnia," by W. H. Hoskins, D.V.S., which, in my opinion, is open to some friendly criticism. In the first place, was it good policy for Dr. Hoskins, when he suspected strychnia poisoning, to tell the owner of the horse to wait until the next morning for him to make a diagnosis? Strychnia poisoning demands *immediate* diagnosis and attention, I think, if we would save our patient. I also cannot agree with the symptoms and post mortem lesions, which are described as being so typical of a case of strychnia poisoning. Delafond, in his *Traité de Thérapeutique Générale*, says: "In herbivorous animals, no matter whether suspended in water or in pill form, strychnia produces its effects quickly; the animal

becomes uneasy, tries to walk about, its muscular movements are retarded, abrupt, and intermittent, and you have contractions of the muscles of the extremities. The pupil is not dilated, the general sensibility is increased, and if you touch the animal, or expose it suddenly to a bright light, or if a sudden noise is heard, immediately the abrupt spasms present themselves. The respiration remains regular, although it is interrupted from time to time by the spasms; the pulse and the beating of the heart is accelerated; the digestive and excretory organs do not show anything remarkable; the animal retains his intelligence, sees, hears, and obeys. In small doses, these effects soon pass away. If the dose is large, the same symptoms manifest themselves, but they are more intense and of longer duration. Its toxic effects show themselves rapidly on the muscles of the entire body, especially on the extensors. The contractions, while they last, are very intense, and are succeeded by a period of rest, to be followed in its turn by a contraction more prolonged than the first; then a new rest occurs, during which the animal seems surprised, but this is of short duration.

"The continued spasms are followed by violent tetanic contractions of the masseter muscles; the eyes move in their sockets, and the pupil dilates. You cannot touch the animal, or make the least noise, without exciting the convulsive movements, which are best likened to the effect of an electric battery applied to the motor nerves. The respiration is irregular, accelerated, and intermittent; the conjunctiva, the mucous membranes of the nares, buccal cavity, and white parts of the integument, take on a violet hue. The intervals of remission are very short; several attacks follow each other quickly, when soon rigor becomes general, the thorax remains immovable, respiration ceases, and the animal dies from asphyxia. Death takes place after the third, fourth, or fifth tetanic spasm, and generally in seven or eight minutes after the manifestation of the first attack." The *post mortem* appearances, according to the same authority, are: "*Strychnia never leaves any traces of its having touched the intestinal mucous membrane.* The other lesions are similar to those consequent upon death from asphyxia, no matter in what way the strychnia has been introduced into the system."

Now in regard to the symptoms and lesions described in the article referred to—profuse salivation, twitchings of the muscles of the neck, low temperature, intense abdominal pain, congestion of the lungs and bronchial tubes. The symptoms and lesions which the Doctor has so well described point to a case of idiopathic tetanus, rather than to a case of strychnia poisoning. The absence of the protrusion of the *membrana nictitans*, also the elevation of the tail, are especially noticed. These symptoms are not always present in a case of tetanus—a patient now in the hospital does not show either—but by careful observation, a peculiar clicking sound can be heard when a motion is made towards the animal's head, showing that there is partial displacement of the membrane; the tail is carried naturally, but the rigidity of the muscles, dilatation of the nostrils, and other symptoms consequent upon tetanus, are well marked.

I have written this, Mr. Editor, not with the intention of proving the diagnosis made erroneous, but with the hope that, if I myself am in error, others may avoid making the same mistake.

I am, sir, yours respectfully,

ROBT H. HARRISON, D.V.S.,

House Surgeon, A. V. H.

Nov. 10, '81.

OBITUARY.

THOMAS C. COWHEY, D.V.S.

The Alumni Association of the American Veterinary College has once more to lament the death of one of her young members. Dr. Thomas C. Cowhey, after a lingering illness, died on the 26th of October, at the age of twenty-one years and a few months. Young, and loving his profession, Dr. C. would, no doubt, have made his mark in the special line of medicine which he had embraced. He had won his diploma, which was delivered to him only in March last, by honorable diligence and hard study. At the time of his graduation, he received the gold medal granted by the Board of Trustees of the College for the best general examination, and he subsequently served with credit as House Surgeon to the Hospital Department of his *Alma Mater*, during which time he had already shown symptoms of the disease which has taken him away from a large circle of friends.

IN MEMORIAM.

THOMAS C. COWHEY.

NEW YORK, November 17th, 1881.

We, the members of the Medical Association of the American Veterinary College, resolve as follows:

Whereas, In His inscrutable wisdom and unerring Providence, it has pleased God to remove from his relatives and friends our most beloved associate and member, THOMAS C. COWHEY, of St. Louis, Mo. Therefore, be it

Resolved, That we profoundly and sincerely lament his loss; and that to his parents—in this, their hour of deep sorrow and bereavement—we tender our mutual sympathy and commiseration. And therefore be it

Resolved, That we send a copy of these resolutions to his parents; and, also, that we publicly express our grief and condolence by inserting a copy in one of the leading papers of St. Louis and the AMERICAN VETERINARY REVIEW. And be it

Resolved, That these resolutions be written in full in the regular minutes of this Association.

W. H. MARTINET,
F. J. HANSHEW,
W. H. ARROWSMITH, } Committee.

NEWS AND SUNDRIES.

ARMY INTELLIGENCE.—The resignation of Veterinary Surgeon Martin Jordan has been accepted, to take effect Nov. 30, '81.—*Army and Navy Journal*.

PLEURO-PNEUMONIA is again reported in Germantown and Delaware County, Penn.

KING KALAKUA, when in this part of the country recently, bought several Kentucky thoroughbred horses and colts, which will be forwarded to Honolulu.—*Prairie Farmer*.

A DAIRYMAN in Halifax had five children down with scarlatina. He, however, continued to dispense milk to his customers. Of eighty-two families he thus supplied, forty-five were attacked with scarlet fever.—*American Cultivator*.

YESTERDAY, October 20, a Jersey heifer, belonging to Col. Taggart's herd, aged 13 months and 24 days, was delivered of a finely developed solid heifer calf. The mother was dropped August 20, 1880.—*Public Press*.

TEXAS contains over 5,000,000 head of cattle, over 1,000,000 of horses, and about 6,000,000 sheep. In cattle raising it stands first among the States of the Union, in horse raising second, and in sheep raising third, if not second.—*Cul. and Country Gent*.

AUGUSTUS STORR, of Brooklyn, N. Y., has presented to the State of Connecticut a well-stocked farm, with suitable buildings, situated in the township of Mansfield, seven miles north of Wilimantic, as a foundation for a State Agricultural School. The gift has been accepted by the State, an annual appropriation made for the support of the school, and a Board of Trustees appointed.—*Prairie Farmer*.

M. DE LACERDA has made in Brazil some experiments, showing that permanganate of potash is an almost certain antidote for the bite of snakes. M. de Lacerda has not as yet tried its efficiency on himself, but in the case of thirty dogs on whom he experimented, only two died under exceptional circumstances,

and all whom he did not treat with the injection of permanganata of potash died in the usual way.

A LIVE STOCK ASSOCIATION for Illinois is on the tapis. The object is the mutual benefit of breeders, feeders, and raisers of live stock. The organization proposes to include breeders of all leading kinds of stock—horses, cattle, sheep, and swine—whose interests, instead of being at variance, are mutual and identical. The only contest between those who raise different breeds of live stock—horses, cattle, sheep, or swine—should be a friendly rivalry for producing the best and most profitable animal for the farmer to raise. The *Prairie Farmer* wishes the new movement the highest success.—*Prairie Farmer*.

— TRICHINÆ IN SOUTHERN HOGS.—The investigations of Dr. J. T. Payne, under the auspices of the New Orleans Auxiliary Sanitary Association, go far toward establishing the claim that Southern-raised hogs are exempt from trichinæ. From the report of Dr. C. B. White, Sanitary Director of the Association, published in the New Orleans *Medical and Surgical Journal* for September, we find that Dr. Payne has examined up to August 1st, 3,026 hogs. In only three did he find trichinæ, and these three hogs came from St. Louis, Mo.

OVARIAN TUMOR IN A HEN.—At a recent meeting of the St. Louis Obstetrical and Gynæcological Society, reported in the *Obstetric Gazette* for August, 1881, Dr. Engelmann exhibited an ovarian tumor taken from a hen. There were two tumors; one was rather larger than a large-sized orange, and the other smaller, about the size of an egg. It was a hard mass, in very distinct layers of brick red and orange color, but apparently not forming a distinct tissue, containing no blood vessels. The centre of the tumor did not seem to be an organized mass, but a hollow cyst, surrounded by a dense, conglomerate, and inorganic mass. Comparatively speaking, it was a very large tumor, its weight being considerably greater than that of the body of the majority of hens.

CHARBON.—The seat and centre of the charbon disease, or "mountain malady," is in Auvergne. The Pasteur process of

vaccination has been tried in several of the mountainous districts, and with the fullest success. M. Pasteur announces that he is occupied in the arrangement of a little laboratory for the commercial preparation of vaccine. No loss will be incurred in the interim, as the disease is limited during winter. He will prepare forty-four gallons of "virus," sufficient to vaccinate one million animals. It will be forwarded in special glass tubes, and the cost will be one halfpenny per head of stock. Up to the present thirty thousand animals—sheep, oxen, cows, horses, etc.—have been vaccinated, and with success, in the sense that they have been saved, while others at their side have succumbed.—*American Farmer*.

A PROLIFIC MULE.—The Arabs have a proverb to the effect that "when the mule has young, men will become women and women men." The mule does not, as a rule, reproduce its kind. In this hybrid between the horse and the ass, the power of reproduction is lost; at least, the instances are exceedingly rare in which it is fertile. The London *Live Stock Journal* recently published the following, in which the fertility of a mule is well authenticated: "One of the curiosities in the Paris Jardin d'Acclimation is a mule, named Catherine, which was purchased several years ago, while on her way through Paris with a Barb stallion and a foal by this horse, to the exhibition at Vienna. When purchased by the Paris society she was again in foal to the same horse. Since she has been in Paris she has thrown two more foals (by a jackass), which are named Salem and Atham, and which may be seen every day drawing the small tramway cars from the Jardin d'Acclimation to the gates of Paris. Her fifth and last produce is a four-months colt foal by the Barb sire referred to above, and has been named Kroumir.—*Prairie Farmer*.

NORTHWESTERN VETERINARY COLLEGE.—We are pleased to notice, in connection with the Minnesota College Hospital, there is to be a veterinary school where students will receive a full course of instruction in the different branches of veterinary medicine and surgery, extending over three winter sessions of six

months each. The branches of chemistry and physiology are taken with medical students of the College Hospital, where they are also allowed the privilege of taking the medical course required. The faculty are to consist of Rich. Price, V.S., F. W. McLellan, V.S., of St. Paul; H. J. Burnash, M.D., S.R.C.P., and C. C. Lyford, M.D., V.S., Minneapolis.—*St. Paul and Minneapolis Pioneer Press.*

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